Docket No.: 29827/41950
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Martin Beck et al.

Application No.: 10/576,049 | Confirmation No.: 8929

Filed: April 14, 2006 | Art Unit: 3761

For: Hydrogel Capable of Absorbing Blood and/or Body Fluids | Examiner: G. T. Chapman

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner of Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in accordance with 37 C.F.R. § 41.37 and MPEP § 1205.02 to support the Notice of Appeal filed in this application on January 14, 2011. This Appeal Brief is accompanied by the fee for filing an Appeal Brief under 37 C.F.R. § 1.17(b) and a one-month extension of time under 37 C.F.R. § 1.136(a). Accordingly, this Appeal Brief is timely filed and no further fees are believed due.

Any additional required fees may be charged, or any overpayment credited, to Deposit Account No. 13-2855.

II. TABLE OF CONTENTS

III. REAL PARTY IN INTEREST

The real party in interest in this appeal is BASF Aktiengesellschaft (BASF), Ludwigshafen, Germany, the assignee of the entire right, title, and interest to the above-identified application. The assignment was recorded in the United States Patent and Trademark Office (USPTO) at Reel 18836, Frame 0098 on January 25, 2007, which constitutes the entire chain of title from the inventors to BASF.

IV. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellants, appellants' legal representative, or the assignee which will directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

V. STATUS OF CLAIMS

A. HISTORY

This application was originally filed with claims 1-16.

B. CURRENT STATUS OF CLAIMS

Claims added: 17-30.

Claims cancelled: 3-14, 16, 22, 23, 25.

Claims withdrawn from consideration, but not cancelled: 17-20.

Claims pending: 1, 2, 15, 21, 24, and 26-30.

C. CLAIMS ON APPEAL

The claims on appeal are claims 1, 2, 15, 21, 24, and 26-30.

VI. STATUS OF AMENDMENTS

Appellants filed a response to a final Office Action on December 15, 2010. The response was not entered even though *no* amendment was presented in the response, and an Advisory Action was mailed January 4, 2011. No amendment or response was filed in response to the Advisory Action of January 4, 2011. Appellants understand that the current form of the claims is represented by Amendment "D", filed May 26, 2010, and as reproduced in the Claims Appendix below.

VII. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is directed to a hydrogel having a specific floatability. The claimed hydrogel separates into two portions of superabsorbent polymer particles upon addition to a container filled with an aqueous fluid. One portion of the particles is hydrophilic, sinks to the bottom of the container, and hydrogel swelling starts from the bottom of the container in an upward direction. The other particle portion is hydrophobic, remains on the fluid surface, and swells starting from the top of the fluid surface in a downward direction. Separation of the two portions of superabsorbent particles *does not rely upon a density difference* between particles. In particular, the hydrogel does not contain a mixture of superabsorbent polymer particles of different density.

Accordingly, the claimed hydrogel comprises standard superabsorbent polymer particles mixed with and coated by the claimed amounts of a hydrophobic compound and multivalent cation, and, in some embodiments, a hydrophilic compound (as in claim 30). A portion of the resulting superabsorbent polymer particles has a sufficient hydrophobic character to float on the surface of an aqueous fluid to start thickening from the surface of the liquid, and the remaining portion of superabsorbent polymer particles has a hydrophilic character and sinks in the aqueous fluid to start thickening from the bottom of the liquid. This is achieved by treating the superabsorbent polymer particles with a hydrophobic compound and a *multivalent* cation (and in some embodiments a hydrophilic compound), as opposed to admixing of different types of polymer particles, for example, admixing polymer particles having a density of less than one with particles having a density of greater than one. See Examples 1-31 wherein a *single* commercial superabsorbent polymer (i.e., Hysorb F) was coated with various additives. No example in the specification contains a mixture of different superabsorbent polymers.

Importantly, the superabsorbent polymer particles are coated with a multivalent cation, i.e., a cation having two or more positive charges, such as Al^{3+}, Ca^{2+}, Mg^{2+}, and the other *multivalent* cations disclosed at page 7, lines 13-16 of the specification. Multivalent cations must be distinguished from *monovalent* cations that have one, and only one, positive charge, such as Na^{+}, K^{+}, and Li^{+}, for example.

As stated in the specification at page 5, lines 11-21:

> "The amounts of hydrophilic and hydrophobic particles are advantageously chosen such that not only an increased rate of swell but also a partial floating of the superabsorbent

> particles on the fluid surface at the start of the swelling process is achieved. The additional coating with hydrophobic particles causes a portion of the superabsorbent to remain on the surface of the fluid to be thickened after all the superabsorbent needed has been added to the fluid to be thickened. A further portion of this superabsorbent thus treated slowly sinks into the solution to be thickened, since superabsorbents based on polyacrylates normally have a higher density than the solutions to be thickened. Without treatment, a commercially available superabsorbent would simply just sink into the solution immediately after addition."

The operation of the claimed hydrogel was demonstrated to the examiner in a previously submitted video. The claimed invention also is illustrated in Examples 1-31 at pages 18 and 19 of the specification, and particularly Examples 24-29.

More particularly, independent claim 1 recites a hydrogel having a floatability and having a thickening capability wherein the hydrogel thickens from 40% to 90% of an aqueous solution or suspension starting from the surface of the solution or suspension and the hydrogel thickens the rest of the solution or suspension starting from the bottom of a container for the solution or suspension (specification, page 16, line 40 through page 17, line 21 and Examples 1-31 at pages 18 and 19), said hydrogel comprising superabsorbent polymer particles coated with 0.05% to 1%, by weight, of a hydrophobic compound, wherein the hydrophobic compound is a hydrophobicized silica or a hydrophobicized mixture of silicas and aluminas (specification, page 6, lines 6-13 and page 6, lines 32-36), and 0.05% to 4%, by weight, of a multivalent cation (specification, page 7, lines 10-42).

Claim 28 recites a hydrogel of claim 1 wherein the multivalent cation is an aluminum ion (specification, page 7, lines 13-16, and Examples 1-31 at pages 18 and 19).

Claim 2 recites that the hydrogel of claim 1 has a solidification time of less than 120 seconds upon contact with the solution or suspension and/or has a blood absorbance of at least 10 g/g (specification, page 15, line 30 through page 16, line 32, and Examples 1-31 at pages 18 and 19).

Claim 15 recites a hygiene article comprising a hydrogel of claim 1, said hygiene article selected from the group consisting of an incontinence article, a napkin, a tampon, and a liner (specification, page 15, lines 9-14).

Claim 21 recites a composition comprising a hydrogel of claim 1 and one or more of a biocidal material, an antimicrobial material, an antibacterial material, a perfume or scent material, a stabilizer, a dye, and a pH indicator (specification, page 15, lines 21-23).

Claim 24 recites the hydrogel of claim 1 wherein the hydrophobic compound is particles having an average diameter from 0.001 to 10 μm (specification, page 6, lines 20-23).

Claim 27 recites the hydrogel of claim 1 wherein the hydrogel further comprises a surfactant (specification, page 8, lines 3-10). Claim 29, which depends from claim 27, recites that the surfactant is a sorbitan ester (specification, Examples 1-31 at pages 18 and 19 and page 20, line 11).

Claim 30 recites that hydrogel of claim 1 further comprises a hydrophilic compound (specification, page 4, lines 26-33, page 6, lines 15-18, and Examples 1-31 at pages 18 and 19). Claim 26, which depends from claim 30, recites that the hydrophilic compound is a silica or a mixture of silicas and aluminas (specification, page 6, lines 15-18).

VIII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 2, 15, and 26-30 would have been obvious under 35 U.S.C. §103(a) over Tsubakimoto et al. U.S. Patent No. 4,286,082 ('082) in view of a Somasundaran et al. publication (Somasundaran).

Whether claim 21 would have been obvious under 35 U.S.C. §103(a) over the '082 patent in view of Somasundaran in further view of Lepore et al. U.S. Patent No. 6,592,768 ('768).

Whether claim 24 would have been obvious under 35 U.S.C. §103 over the '082 patent in view of Somasundaran in further view of Karapasha et al. U.S. Patent No. 5,306,487 (487).

Whether claims 1, 26, and 28 are patentable over claims 1 and 4-6 of copending U.S. Application No. 10/577,208 under the judicially created doctrine of obviousness-type double patenting.

For the purposes of the issues on appeal, claims 2, 15, 21, 24, and 26-30 are grouped and argued with claim 1.

IX. ARGUMENT

A. INTRODUCTION

Appellants submit that the rejections issued in the final Office Action are in error, and that the present application is in condition for allowance. Appellants respectfully request the Board to review and reverse each obviousness rejection and the obviousness-type double patenting rejection issued in the final Office Action.

B. PROPER BASIS FOR A § 103(A) OBVIOUSNESS REJECTION

A determination that a claimed invention would have been obvious under §103(a) is a legal conclusion involving four factual inquiries: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any, of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art which the claimed subject matter pertains, who is presumed to have all prior art references in the field of the invention available to him/her. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). Furthermore, obviousness must be determined as of the time the invention was made and in view of the state of the art that existed at that time. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1050-51 (Fed. Cir. 1988).

The Patent Office must clearly articulate facts and reasons why the claimed invention "as a whole" would have been obvious to a hypothetical person having ordinary skill in the art at least as of the claimed invention's effective filing date. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (citing with approval *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")); see also MPEP §2143 ("The key to supporting any rejection under 35 U.S.C. §103 is the clear articulation of reason(s) why the claimed invention would have been obvious.").

To reach a proper determination under 35 U.S.C. §103(a), the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of appellants'

disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search, and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon appellants' disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the *facts* gleaned from the prior art. MPEP §2142. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Gorman*, 933 Fed. 2d 982, 987, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991). *In re Fritch*, 23 USPQ 2d 1780 at 1784 (Fed. Cir. 1992).

As articulated by the Court of Appeals for the Federal Circuit in *Ortho-McNeil Pharmaceutical Inc. v. Mylan Laboratories Inc.*, 86 USPQ 2d, 1196, 1201-2 (Fed. Cir. 2008):

> "As this court has explained, however, a flexible TSM test remains the primary guarantee against a non-statutory hindsight analysis such as occurred in this case. *In re Translogic Tech., Inc.* 504 F.3d 1249, 1257 [84 USPQ 2d 1929] (Fed. Cir. 2007) ("[A]s the Supreme Court suggests, a flexible approach to the TSM test prevents hindsight and focuses on evidence before the time of invention.)."

Furthermore, to establish a *prima facie* case of obviousness, three requirements must be satisfied. First, the prior art references *must* teach or suggest all the limitations of the claims. In *re Wilson*, 165 USPQ 494, 496 (C.C.P.A. 1970). Second, as held in *KSR International Co. v. Teleflex Inc.* et al., 127 S.Ct. 1727 (2007), "a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. ...it [may] be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was *an apparent reason* to combine the known elements in the fashion claimed by the patent at issue. ...it can be important to *identify* a *reason that would have prompted a person of ordinary skill in the relevant field to combine the elements* in the way the claimed new invention does... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." (emphasis added, *KSR*, *supra*). Third, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at

the time the invention was made. *Amgen Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991).

Once the Patent Office properly sets forth a *prima facie* case of obviousness, the burden shifts to appellants to come forward with evidence and/or argument supporting patentability. *See In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002). Rebuttal evidence is merely a showing of facts supporting the opposite conclusion." *In re Piasecki*, 745 F.2d 1468,1472 (Fed. Cir. 1984). Evidence rebutting a prima facie case of obviousness can include "evidence of unexpected results," *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348 1369 (Fed. Cir. 2007); or "evidence that the prior art teaches away from the claimed invention in any material respect," *In re Peterson*, 315 F.3d 1325, 1331 (Fed. Cir. 2003). The Patent Office must always consider such evidence supporting patentability. *See, e.g., In re Sullivan*, 498 F.3d 1345, 1352-53 (Fed. Cir. 2007). Comparative data in the specification illustrating the claimed invention must be considered in reaching a conclusion of obviousnes. *In re Margolis*, 788 F.2d 1029, 228 USPQ 940 (Fed. Cir. 1986).

In addition, appellants respectfully note that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on appellants' disclosure. *In re Vaeck*, 947 F.2d 4899 (Fed. Cir. 1991). The mere fact that the prior art may be modified in the manner suggested by the examiner does *not* make the modification obvious unless the prior art suggests the desirability of the modification. *In re Gordon*, 733, F.2d at 902, 221 USPQ at 1127. *In re Fritch*, 23 USPQ 2d 1780, 1783-1784 (Fed. Cir. 1992). The Court in *KSR* further emphasized the importance of *identifying a reason* that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does (*Id.*, emphasis added).

C. PROPER BASIS FOR AN OBVIOUSNESS-TYPE DOUBLE PATENTING REJECTION

An obviousness-type double patenting analysis is "analogous to [a failure to meet] the nonobviousness requirements of 35 USC §103" except that the specification of the patent principally underlying the double patenting rejection cannot be considered prior art. *See* MPEP §804(II)(B)(1); *see also, General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279 (Fed. Cir. 1992) (stating that the disclosure of the patent principally underlying the rejection may not be used as prior art). During prosecution, therefore, the Patent Office bears the burden of establishing a *prima facie* case that the application claims

are obvious over the claims in the commonly-assigned patent or application. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). The Patent Office's conclusion of obviousness-type double patenting must be made in light of the factual inquiries set forth in *Graham v. John Deere Co.*

Generally, an obviousness-type double patenting rejection should make clear: (a) the differences between the inventions defined by the conflicting claims; and (b) reasons why the skilled artisan would conclude the invention recited in the pending claims would have been an obvious variation of (*i.e.*, patentably indistinct from) the invention recited in the claims of a co-pending application. *See generally*, MPEP § 804(II(B)(1); *see also*, *Georgia-Pacific Corp. v. United States Gypsum Co.*, 195 F.3d 1322, 1326-27 (Fed. Cir. 1999). An application claim is patentably indistinct from an earlier patent claim if the application claim is obvious over (or anticipated by) the earlier patent claim. *In re Longi*, 759 F.2d 887, 896 (Fed. Cir. 1985).

D. REJECTION OF CLAIMS 1, 2, 15 AND 26-30 UNDER 35 U.S.C. § 103 AS BEING OBVIOUS OVER TSUBAKIMOTO ET AL. U.S. PATENT NO. 4,286,082 ('082) IN VIEW OF A SOMASUNDARAN ET AL. PUBLICATION

Claims 1, 2, 15, and 26-30, directed to a hydrogel and a hygiene article containing the hydrogel, stand rejected under 35 U.S.C. § 103 as being obvious over the '082 patent in view of Somasundaran.

1. Disclosure of the '082 Patent

The '082 patent is directed to an absorbent resin composition comprising water-absorbent resin particles blended with an ultra-microscopic silica of specific surface area and particle diameter ('082 patent, abstract and column 1, line 52 through column 2, line 12). Contrary to assertions made by the examiner, the '082 patent does *not* disclose that the water-absorbent resin is coated with a *multivalent* cation.

The examiner relies upon column 3, lines 46-47, of the '082 patent for a teaching of coating the water-absorbent resin particles with a multivalent cation. First, this portion of the '082 patent discloses *only* alkali metal cations, i.e., sodium, potassium, and lithium. These metal cations are *not* the multivalent cations, but are *monovalent* cations, i.e., Na^+, Li^+, and K^+.

Second, the monovalent cations of the '082 patent are not coated onto the water-absorbent resin particles, but rather are the counterions of the alkali used to neutralize the

acrylic acid monomer, e.g., to provide sodium polyacrylate after the polymerization (see '082 patent, column 3, lines 47-50). Also see '082 patent, column 1, lines 52-59, disclosing an acrylic acid monomer (B) composed of 50 to 100 mol% of an *alkali metal* acrylate; column 3, lines 20-41, disclosing the neutralization of acrylic acid to provide an alkali metal acrylate; and column 3, lines 46-50, disclosing the identity of the alkali metal, Also see the examples of the '082 patent wherein all examples teach a sodium acrylate or a potassium acrylate.

The '082 patent, either in the above cited excerpts or in any other portion of the reference, fails to teach or suggest a multivalent cation. In fact, the '082 patent fails to even mention a multivalent cation throughout the entire specification.

2. Disclosure of Somasundaran

Somasundaran is an excerpt from the *Encyclopedia of Surface and Colloid Science* directed to fumed silica and alumina, and to the practical applications of these materials in industry. The reference is a general description of hydrophilic and hydrophobic silicas and aluminas, and the different uses for these materials. Somasundaran discloses that a "hydrophobic fumed silica floats on water, whereas a hydrophilic fumed silica sinks and mixes in" (Somasundaran, page 5324, top left column).

3. Rejection of Claims 1, 2, 15, and 26-30 under 35 U.S.C. § 103 as Being Obvious Over the '082 Patent in View of Somasundaran

As discussed above in Section VII, the claimed hydrogel comprises standard superabsorbent polymer particles mixed with and coated by the claimed amounts of (a) a hydrophobic compound and (b) a *multivalent* cation, and, in some embodiments, a hydrophilic compound. A portion of the resulting superabsorbent polymer particles has a sufficient hydrophobic character to float on the surface of an aqueous fluid to start thickening from the surface of the liquid, and the remaining portion of superabsorbent polymer particles has a hydrophilic character and sinks in the aqueous fluid to start thickening from the bottom of the liquid. This is achieved by treating the superabsorbent polymer particles with specifically claimed amounts of a hydrophobic compound and a multivalent cation (and in some embodiments a hydrophilic compound), as opposed to admixing of different types of polymer particles, for example, admixing polymer particles having a density of less than one with particles having a density of greater than one.

This rejection is based on an assertion that (a) because the '082 patent discloses a hydrogel containing superabsorbent polymer particles coated with a hydrophobic compound

and a multivalent cation, and (b) because Somasundaran discloses hydrophobic pyrogenic silica that floats and hydrophilic silica that sinks, a combination of the '082 patent and Somasundaran therefore renders the present claims obvious. The examiner however misinterprets the cited references, and, accordingly, misapplies the cited references against the claims. The examiner also has failed to consider the invention as a whole, and after a misapplication of the cited references, arrives at the claimed hydrogel by an apparent hindsight reconstruction of the claims.

The proper basis to establish and support an obviousness rejection under 35 U.S.C. §103 is set forth in above in Section IX.B. It must be noted that to establish a prima facie case of obviousness, each of three requirements must be satisfied, the first of which is that the prior art references must teach or suggest all the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496 (C.C.P.A. 1970).

The '082 patent is directed to an absorbent resin composition comprising water-absorbent resin particles blended with an ultra-microscopic silica of specific surface area and particle diameter.

The examiner *incorrectly* asserts that the '082 patent also discloses coating of the water-absorbent resin particles with a *multivalent* cation, and relies upon column 3, lines 46-47 of the '082 patent. First, this portion of the '082 patent *only* discloses *mono*valent cations, i.e., lithium, sodium, and potassium. Second, the resin particles are *not* coated with these monovalent cations. They are the counterions of the base used to neutralize the acrylic acid monomer. See '082 patent, column 3, lines 20-41, disclosing the neutralization of acrylic acid using an alkali metal hydroxide. The '082 patent fails to disclose a multivalent cation *anywhere* in the reference.

The examiner therefore has misinterpreted the '082 patent by asserting that the reference discloses a multivalent cation.

The CAFC has held that an assertion of obviousness is called into question when the cited art is misinterpreted. In *In re Chapman* (CAFC 2009-1270, Feb. 2010), the court noted errors made by the USPTO in interpreting a reference, and stated the following:

> "The government argues that these errors are harmless, but we conclude that these errors are harmful because they increase the likelihood that Chapman was erroneously denied a patent on grounds of obviousness. If the Board based its decision on a misunderstanding of Gonzalez, its conclusions regarding obviousness are called into question. With respect to the second

> error, the Board was mistaken as to whether Gonzalez teaches the use of a polymer to link the light and heavy chains in a $F(ab')_2$ fragment in the cited embodiment. Therefore, Chapman's use of a polymer to link together two F(ab') fragments may be less likely to be obvious. Further, as to the third error, if the Board did not appreciate the full scope of antibody fragments disclosed in Gonzalez, we cannot be confident about its ultimate conclusion that the selection of one of them to form Chapman's molecule is obvious, as it appears that there are more possibilities from which to choose. Because we cannot say with confidence that the Board would have reached the same conclusion in the absence of these errors, we are persuaded they are indeed harmful. *See Kotteakos v. United States*, 328 U.S. 750, 765 (1946)."

In the present application, the examiner has misinterpreted a monovalent cation of the '082 patent as being a multivalent cation.

It also must be noted that the present claims *cannot* be read to encompass the monovalent cations of the '082 patent. The claims are given the broadest *reasonable* interpretation during examination. However, an examiner cannot give the claims an incorrect interpretation. As stated in *In re Skvorecz* (580 F.3d 1262, 1267 (Fed. Cir. 2009)):

> "The protocol of giving claims their broadest reasonable interpretation during examination does not include giving claims a legally incorrect interpretation. This protocol is solely an examination expedient, not a rule of claim construction. Its purpose is to facilitate exploring the metes and bounds to which the applicant may be entitled, and thus to aid in sharpening and clarifying the claims during the application stage, when claims are readily changed. *See In re Buszard*, 504 F.3d 1364, 1366 (Fed. Cir. 2007); *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999).

Also see *In Re Ravi Vaidyanathan* (381 Fed. Appx. 985, 991 (Fed. Cir. 2010) (unpublished)) stating:

> "The PTO Solicitor responds that the broadest reasonable claim interpretation that is supported by the specification is adopted during examination, for the claims can readily be amended during examination, to impart precision if needed. We agree with this protocol as an examination expedient, for its purpose is to aid in sharpening the claims in order to avoid ambiguity or uncertainty in the issued patent. See e.g., *In re Skvorecz*, 580 F.3d 1262, 1267 (Fed. Cir. 2009); *In re Buszard*, 504 F.3d 1364, 1366–67 (Fed. Cir. 2007); *In re Prater*, 415 F.2d 1393, 1396 (CCPA 1969). However, the PTO's "broadest" interpretation must be reasonable, and must be in conformity with the invention as described in the specification.
>
> The Board's interpretation of claim 9 finds no support in the '203 specification, and is not a reasonable interpretation under the rules of claim construction. The description in the specification consistently indicates that the neural network guides the munition all the way intercept. The '203 specification uses the word "strike" synonymously with "intercept,"

> foreclosing the divergent meanings the Board seeks to attach to these terms. The Board's rejection of claims 8 and 9 was based on an incorrect interpretation of these claims. That rejection is vacated and remanded for reconsideration under the correct interpretation of the claims, and in further view of the issues with respect to obviousness as discussed in connection with claims 1–7."

The present specification fails to disclose coating a hydrogel with a monovalent cation, and the present specification could not support such a claim. The examiner's attempt to equate a monovalent cation to a multivalent cation is not in conformity with the invention disclosed in the specification and therefore is erroneous. Moreover, persons skilled in the art are well aware of the differences in chemical and physical properties between a monovalent cation and a multivalent cation, do not equate the two, and do not simply substitute one for the other. Further, in the hydrogel art, coating a monovalent cation on a hydrogel would have *no* effect. Monovalent cations *already are present* from the process of providing a neutralized monomer, which is responsible for the high water absorbency of the polymer.

Neither the '082 patent nor, as discussed below, Somasundaran teaches or suggests a multivalent cation, let alone coating superabsorbent polymer particles with a multivalent cation. Accordingly, for this reason alone, the combination of cited references cannot render the present claims obvious.

Somasundaran fails to cure the deficiencies of the '082 patent. In particular, Somasundaran fails to teach or suggest coating superabsorbent polymer particles with a multivalent cation. Somasundaran merely describes fumed silica and fumed alumina, and their practical applications. Although *some* fumed silicas float on water, the combination of cited references (fails to teach or suggest that coating superabsorbent polymer particles with a fumed silica would improve the floatability of the superabsorbent particle, especially because superabsorbent particles absorb large amounts of water and would be expected to sink in water at the low claimed amount of hydrophobic compound (i.e., 0.05% - 1%, by weight) coated on the superabsorbent polymer particles.

In addition, after reading Somasundaran, (i.e., a hydrophobic silica floats) a person skilled in the art would expect that a relatively large particle size superabsorbent polymer particle coated with a small amount of a small particle size fumed silica would separate upon addition to water to provide a floating fumed silica and a sinking superabsorbent polymer particle. Unexpectedly, this does not occur, but rather the hydrophobic silica of small particle

size allows the large superabsorbent polymer particle to float and thicken the liquid from the top surface of the liquid.

The examiner also misinterprets the references at paragraph 9, page 4 of the first Office Action. First, alumina cannot be "in the form of aluminum sulfate". Alumina is a specific, water-*insoluble* compound, i.e., Al_2O_3 (see Somasundaran). Aluminum sulfate is a different specific, water-*soluble* compound, i.e., $Al_2(SO_4)_3$. Aluminum sulfate is not hydrophobic, but is a water-soluble salt. These two compounds are *not* interchangeable and have substantially different chemical and physical properties, and are used in very different practical applications.

Further, the '082 patent fails to teach or suggest floatability or thickening, as the examiner asserts, but rather teaches the *opposite*, i.e., that the "particles retained fluidity for a long period of time even after absorption of moisture" ('082 patent, column 15, lines 51-56).

The examiner asserts that the particles of the '082 patent and the claimed particles are substantially identical and therefore should perform similarly. This assertion is incorrect because the '082 patent *fails* to teach or suggest coating multivalent cations on the superabsorbent polymer particles, as presently claimed.

The examiner misinterprets the '082 patent *again* with respect to claim 2. The '082 patent does *not* disclose a blood absorbance at Table 2 of claim column 15. Table 2 clearly discloses absorption of 0.9% *saline* in the headings of the table. A 0.9% saline solution is a 0.9% aqueous solution of sodium chloride, which approximates urine (see specification, page 1, lines 28-31). It is well known in the art that a superabsorbent polymer absorbs more of a 0.9% saline solution than blood because blood contains substantial amounts of additional components, such as a platelets and serum. The differences between absorbing urine and blood are fully described in the specification at page 2, line 1 through page 3, line 6. The claimed invention addresses these differences, and overcomes the problems encountered in blood absorption (which are not achieved using a standard superabsorbent polymer). The '082 patent *fails* to teach or suggest the high blood absorption recited in claim 2.

The examiner's rationale supporting the rejection of claim 28 also is in error. The '082 patent discloses monovalent cations only, not multivalent cations, as discussed above. Somasundaran also fails to teach multivalent *cations*. Somasundaran teaches alumina wherein the aluminum atoms are strongly covalently bonded to the oxygen atoms and are *not* available as cations. Alumina is not water soluble.

For all the reasons set forth above, it is submitted therefore that claims 1, 2, 15, and 26-30 would not have been obvious over a combination of the '082 patent and Somasundaran under 35 U.S.C. §103 and that the rejection is in error.

E. REJECTION OF CLAIM 21 UNDER 35 U.S.C. § 103 AS BEING OBVIOUS OVER THE '082 PATENT IN VIEW OF SOMASUNDARAN AND LEPORE ET AL. U.S. PATENT NO. 6,592,768 ('768)

Claim 21, directed to a hydrogel-containing composition, stands rejected under 35 U.S.C. §103 as being obvious over the '082 patent in view of the Somasundaran and further in view of the '768 patent.

1. Disclosure of the '768 Patent

The '768 patent is directed to the use of polyvinylpyrrolidine iodine complexes and a gelling agent to disinfect wastes. The gelling agent can be a superabsorbent polymer. The '768 patent fails to even mention multivalent cations

2. Rejection of Claim 21 under 35 U.S.C. § 103 as Being Obvious Over the '082 Patent in View of Somasundaran and the '768 Patent

The '082 patent and Somasundaran have been discussed above. In addition, the patentability of independent claim 1 over a combination of the '082 patent and Somasundaran has been discussed above. The '768 patent does not overcome the deficiencies of these two cited references.

In particular, like the '082 patent and Somasundaran, the '768 patent fails to teach or suggest multivalent cations applied to a superabsorbent polymer particle. A combination of the '082 patent, Somasundaran, and the '768 patent therefore fails to teach or suggest every element in the claims, and cannot render claim 21 obvious.

In addition, claim 21 recites a preferred embodiment of the present invention. Appellants do not rely solely upon the features recited in claim 21 for patentability, but rather rely upon the features of claim 21 and the features of independent claim 1 from which claim 21 depends. Accordingly, it is submitted that claim 21 is patentable over a combination of the '082 and '768 patents and Somasundaran for the same reasons that claim 1 is patentable over the '082 patent and Somasundaran.

In summary, for the reasons set forth above and with respect to the nonobviousness of claims 1, 2, 15, and 26-30, claim 21 would not have been obvious over a combination of the '082 and '768 patents and Somasundaran and the rejection is in error.

F. REJECTION OF CLAIM 24 UNDER 35 U.S.C. § 103 AS BEING OBVIOUS OVER THE '082 PATENT IN VIEW OF SOMASUNDARAN AND KARAPASHA ET AL. U.S. PATENT NO. 5,306,487 ('487)

Claim 24, directed to a hydrogel wherein a hydrophobic compound of a specific particle size diameter is applied to a superabsorbent polymer particle, stands rejected under 35 U.S.C. §130 as being obvious over the '082 patent in view of Somasundaran and further in view of the '487 patent.

1. Disclosure of the '487 Patent

The '487 patent is directed to high capacity odor controlling compositions comprising a mixture of an adsorbent gelling material and a water-insoluble odor controlling agent ('487 patent, column 3, lines 25-29). The odor-controlling agent can be a SiO_2/AlO_2 zeolite ('487 patent, column 3, lines 48-52). Also see '487 patent, column 5, line 21 through column 10, line 7. The compositions of the '487 patent typically contain greater than 10% of the odor-controlling agent (column 3, lines 29-30) and preferably at least 20% and more preferably at least 30%, of the odor-controlling agent. The size of the odor-controlling agent is 1-15 microns (column 3, line 59). The '487 patent is relied upon for a teaching of the particle size of the claimed hydrophobic compound. The '487 patent fails to teach or disclose a multivalent metal cation.

2. Rejection of Claim 24 under 35 U.S.C. § 103 as Being Obvious Over the '082 Patent in View of Somasundaran and the '487 Patent

The '082 patent and Somasundaran, and the patentability of independent claim 1 over '082 patent and Somasundaran, are discussed above. The '487 patent fails to cure the deficiencies of the '082 patent and Somasundaran.

In particular, like the '082 patent and Somasundaran, the '487 patent fails to teach or suggest coating a superabsorbent polymer particle with a multivalent cation. A combination of the '082 patent, Somasundaran, and the '487 patent therefore fails to teach or suggest every element recited in the claims, and cannot render claim 24 obvious.

In addition, the examiner's rationale to support the rejection is faulty. The examiner argues that the small particles, as claimed, would increase fluid uptake. However, the recited particle size is that of the *hydrophobic* compound, which does *not* absorb aqueous fluids. The examiner again has misinterpreted the claim and the cited art, and such errors were found to be harmful. Accordingly, any conclusion of obviousness based on the misinterpretation is called into question (*In re Chapman* (CAFC 2009-1270, Feb. 2010)).

The examiner also incorrectly states that particle size provides floatability. In the present application, the particle size of the hydrophobic compound is much smaller than the particle size of the superabsorbent polymer particle, which controls any size related arguments. Further, it is the hydrophobicity of the hydrophobic compound, and the amount of hydrophobic compound, that primarily contributes to the claimed floatability of the claimed particles. Small *hydrophilic* particles, such as hydrophilic silica and alumina sink in water, as taught by Somasundaran.

Finally, claim 24 recites a preferred embodiment of the present invention, and Appellants do not rely solely upon the features recited in claim 24 for patentability, but rather rely upon the features recited in claim 24 and in independent claim 1 from which claim 24 depends for patentability. Accordingly, it is submitted that claim 24 is patentable over a combination of the '082 and '487 patents and Somasundaran for the same reasons that claim 1 is patentable over the '082 patent and Somasundaran.

In summary, for the reasons set forth above and with respect to the nonobviousness of claims 1, 2, 15, 26-30, it is submitted that claim 24 is patentable over a combination of the '082 and '487 patents and Somasundaran, and that the rejection is in error.

G. REJECTION OF CLAIMS 1, 26, AND 28 ON THE GROUND OF NON-STATUTORY OBVIOUSNESS-TYPE DOUBLE PATENTING OVER CLAIMS 1 AND 4-6 OF COPENDING APPLICATION NO. 10/577,028 ('028 APPLICATION)

1. Claims 1 and 4-6 of the '028 Application

The '028 application is directed to polymeric particles capable of absorbing blood and/or body fluids. The '028 application has been allowed, and has issued as U.S. Patent No. 7,867,623 ('623). Claims 4 and 5 of the '028 patent were cancelled during prosecution and incorporated into claim 1 of the '623 patent. Accordingly, the present rejection is directed to claims 1 and 6 of the '623 patent.

Claims 1 and 6 of the '623 patent recite:

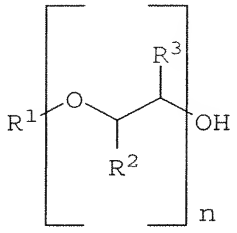
> "1. Polymeric particles capable of absorbing blood and/or body fluids comprising
>
> a) at least one interpolymerized ethylenically unsaturated acid-functional monomer,
>
> b) at least one interpolymerized crosslinker,

c) optionally one or more interpolymerized ethylenically and/or allylically unsaturated monomers copolymerizable with a),

d) optionally one or more water-soluble polymers onto which said monomers a), b), and optionally c) are at least partially grafted, and

e) optionally one or more reacted postcrosslinkers,

wherein said polymeric particles are coated with at least one surfactant and with at least one solvent of the general formula (I),



(I)

,

wherein

R^1 is C_1-C_6-alkyl with or without halogen substitution,

R^2 and R^3 are independently hydrogen or methyl, and

n is an integer from 1 to 5,

wherein the polymer particles are further coated with aluminum cations.

6. The polymeric particles of claim 1 characterized by a blood absorbence of at least 15 g/g in the dry state."

Claims 1 and 6 of the '623 patent each require polymeric particles coated with (a) a surfactant, (b) a solvent of general formula (I), and (c) aluminum cations. The solvent of general formula (I) is a specific ether or polyether compound.

2. Rejection of Claims 1, 26, and 28 on the Ground of Obviousness-Type Double Patenting Over Claims 1 and 4-6 of the '028 Application

To achieve the benefits of the '623 patent, i.e., the '028 application, the polymeric particles require *each* of a surfactant, a solvent of general formula (I), and aluminum ions. Examples of the solvent of general formula (I) are set forth in the '623 patent at column 3, lines 33-57. The '623 patent also discloses various optional ingredients that can be added to the polymeric particles at column 9, lines 15-30. The '623 patent fails to teach or suggest a hydrophobic silica or alumina or any specific amount of any optional ingredient.

In contrast, the present claims recite superabsorbent polymer particles coated with 0.05-1.0%, by weight, of a hydrophobic silica and/or alumina and 0.5-4%, by weight, of a multivalent cation, in amounts sufficient such that the particles have a floatability wherein the hydrogel thickeners from 40-90% of an aqueous solution from the surface of the solution. A surfactant is an optional ingredient, and is *not* needed to achieve the benefits of the present invention. The present specification fails to teach or suggest *any* organic solvent, let alone the specific ethers recited in the '028 application.

Therefore, the invention of the '623 patent and the present invention each are directed to absorbing blood and body fluids, but do so *using entirely different compositions*, and by different methods. The particles of the '623 patent do not float in order to absorb an aqueous medium from the surface of the medium.

Appellants respectfully submit that claims 1, 26, and 28 of the present application are patentably distinct over claims 1 and 4-6 of the '028 application, i.e., claims 1 and 6 of the '623 patent. Further, applicants submit that, in determining obviousness-type double patenting, the question to be considered is stated *In re Vogel and Vogel*, 164 U.S.P.Q. 619, 622 (CCPA 1970), i.e., "Does any claim in the application define merely an obvious variation of an invention disclosed and claimed in the patent?". The CCPA goes on to indicate that, "In considering the question, the patent disclosure may not be used as prior art."

The pending claims are directed to a hydrogel comprising superabsorbent polymer particles coated with a hydrophobic compound and a multivalent cation. In comparison, the claims of the '623 patent are directed to polymeric particles coated with at least one surfactant, at least one solvent having one hydroxy group and at least one ether group, and aluminum cations.

The present claims fail to teach or suggest a solvent as claimed in the '623 patent. The '623 patent fails to teach or suggest a hydrophobic compound. The examiner has provided no rationale wherein a person skilled in the art would have any incentive to substitute a solvent of '623 patent for the hydrophobic compound of the present application, or *vice versa*. Further, if the solvent of the '623 patent was substituted for the claimed hydrophobic compound, the resulting particles would not exhibit the claimed floatability/thickening properties as presently claimed because the particles would *not* have the necessary hydrophobic character to float and partially thicken from the top surface of a liquid.

In applying the test set out in *In re Vogel*, appellants submit that present claims 1, 26, and 28, directed to particles coated with a hydrophobic compound, clearly are not made obvious to one of ordinary skill in the art by claims 1 and 6 of the '623 patent, each directed to particles treated with particular solvent containing a hydroxyl group and at least one ether group.

Furthermore, appellants clearly are not attempting to claim related subject matter in order to extend the patent term of claims in the '623 patent, which the doctrine of obviousness-type double patenting is intended to prevent. See, e.g., *In re Kaplan*, 229 U.S.P.Q. 278 (Fed. Cir. 1986). In particular, the present application and the '623 patent have the same PCT filing date, and under normal circumstances will expire on the same day.

Further, the rejection does not set forth a *prima facie* case demonstrating that claims 1 and 6 of the '623 patent either anticipates or renders obvious claims 1, 26, and 28 of the present application. Specifically, the action does not construe or compare any of the claims of the '623 patent to claims 1, 26, and 28 of the present application, other than to conclude "because the instant claims claim the substantially identical hydrogel in terms of functional properties desired while the copending claims claim the hydrogel in terms of chemical structure, thus the instant and copending claims are drawn to and claim the substantially identical invention but claimed wherein the difference is in the structural language" (Office Action of August 17, 2010, page 10, paragraph 29).

However, the rejection neither identifies the differences between claims 1 and 6 of the '623 patent and rejected claims 1, 26, and 28, nor how those differences are such that the rejected claims are nevertheless obvious over claims 1 and 6 of the '623 patent. Therefore, no legitimate basis exists for concluding that issuance of the rejected application claims 1, 26, and 28 would somehow constitute an improper time-wise extension of the exclusionary rights defined by claims 1 and 6 of the '623 patent. On this basis alone, the obviousness-type double patenting rejection is in error.

The examiner's rationale supporting the rejection also is incorrect. The present claims do not recite merely functional language, but functional language *and* a specific composition that achieves the claimed function. In particular, present claim 1 recites superabsorbent polymer particles coated with a specific range of hydrophobic silica or hydrophobic mixtures of alumina and silica, and a specific range of multivalent cations, in order to achieve the

claimed floatability such that the coated particle thickens an aqueous liquid 40 to 90% from the top surface of the liquid and 10% to 60 from the bottom of the aqueous liquid.

A number of differences exist between present claims 1, 26, and 28 and claims 1 and 6 of the '623 patent. Notably, the present claims require a hydrophobic compound and the '623 patent claims require a specific ether compound containing a hydroxy group. Claims 1 and 6 of the '623 patent contain no disclosure of the hydrophobic compound, let alone the claimed amount *and* no disclosure relating to the floatability of the claimed hydrogel.

A person skilled in the art would not have the incentive to modify claims 1 and 6 of the '623 patent by substituting a hydrophobic alumina/silica for the solvent recited in claims 1 and 6 of the '623 patent with any reasonable expectation of providing a superabsorbent capable of absorbing large amounts of blood and body fluids. How does a person skilled in the art logically make a jump in reasoning to substitute an inorganic insoluble powder for liquid organic ether-hydroxy solvent? Such a jump in logic cannot be rationalized.

In summary, for the reasons set forth above, claims 1, 28, and 29 would not have been obvious over claim 1 and 6 of the '623 patent, and the obviousness-type double patenting rejection should be withdrawn.

H. RESPONSE TO EXAMINER'S REPLY TO APPELLANTS' ARGUMENTS

In the Final Office Action and in the Advisory Action of January 4, 2011, the examiner made statements in an attempt to support the obviousness rejection. Appellants now address some of these statements.

At paragraph 7, page 3 of the final Office Action, the examiner states that the '082 patent discloses the claimed invention except for a hydrogel having floatability. This statement is incorrect. The '082 patent fails to teach or suggest a multivalent cation. As discussed above, the '082 patent merely discloses monovalent alkali metal cations that are present throughout the superabsorbent polymer particles due to neutralization of the monomer with an alkali metal base prior to neutralization. In the present invention, multivalent cations are coated onto superabsorbent polymer particles containing the alkali metal cations.

At paragraph 9, page 4 of the final Office Action, the examiner states "[A]lumina in the form of aluminum sulfate". As explained above, alumina is an insoluble material different in structure, properties, reactivity, etc. from the water-soluble aluminum sulfate.

Also, note the appellants clearly recite the materials as different components of the claimed hydrogel, i.e., a mixture of silica and *alumina* can be the hydrophobic compound and aluminum sulfate can be a source of the multivalent cation. Accordingly, the two compounds *must* be different.

In paragraph 9, the examiner also incorrectly states that the hydrophobic silica/alumina is "in the claimed ranges of 0.05 to 4% by weight". This is incorrect, the silica/alumina is the hydrophobic compound, present at 0.05 to 1%, by weight.

At paragraph 11 of the final Office Action, the examiner asserts that the invention is claimed in terms of what it does rather than what the invention is. This is incorrect. As discussed above, a specific hydrogel is claimed in terms of its composition and in terms of how it performs. The hydrogel clearly recites claimed ranges of 0.05%-1% of hydrophobic compound and 0.05%-4% multivalent cation. It is these components and ranges that provide the benefits of the present application. In this paragraph, the examiner also alludes to "products of an identical composition" and an inherency rationale. The cited references do not teach or suggest a composition identical to the claimed composition, i.e., in combination they fail to teach or suggest a multivalent cation.

At paragraph 13, the examiner asserts that a *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. However, to establish a *prima facie* case of obviousness, the cited references *must* disclose *each* element of the claims. As discussed above, neither the '082 patent nor Somasundaran teach or suggest the recited feature of multivalent cations.

At paragraph 15 of the final Office Action, the examiner asserts that the '082 patent discloses a blood absorbance of at least 10 g/g. This is incorrect. As discussed above, the '082 patent merely discloses absorption of 0.9% saline, which is different from blood absorbance.

At paragraph 19 of the final Office Action, the examiner asserts that the '082 patent discloses multivalent cations. As described above, this assertion is incorrect. The examiner also asserts that Somasundaran discloses aluminum ions in teaching alumina. This assertion also is incorrect, as discussed above, because free aluminum ions (Al^{3+}) is completely different from bound aluminum (Al_2O_3). Somasundaran does *not* disclose aluminum ions.

The examiner is giving the term "alumina" an unreasonably broad interpretation equating a hydrophobic alumina particle to water-soluble aluminum salts. These two types of

compounds are different in structure and in all properties. As noted above, claims are given their broadest *reasonable* interpretation, but cannot see given an incorrect interpretation. See *In re Skvorecz*, 580 F.3d 1262, 1267 (Fed. Cir. 2009) and *In re Ravi Vaidyanathan*, 381 Fed. Appx. 985, 991 (Fed. Cir. 2010) (unpublished).

At paragraph 26 of the final Office Action, the examiner argues that it would have been obvious to use the particle size of the '768 patent as the particle size of the '082 patent and Somasundaran. The examiner fails to recognize the difference in particle size between the superabsorbent polymer particle (i.e., 45-1000 μm, specification, page 14, lines 4-8) and the much smaller hydrophobic compound (i.e., 0.001-10μm) that coat the superabsorbent polymer particle.

The examiner also argues that the smaller particles, as recited, would increase fluid uptake. However, the recited particle size in claim 24 is that of the *hydrophobic* compound, which does *not* absorb aqueous fluids. The examiner has misinterpreted the claim and the art, and such errors were found to be harmful, and as such a conclusion of obviousness based on the misinterpretation can be called into question (*In re Chapman* (CAFC 2009-1270, Feb. 2010)). The examiner also incorrectly states that particle size provides floatability. In the present application, the particle size of the hydrophobic compound is much smaller than the particle size of the superabsorbent polymer particle, which controls any size related arguments. Further, it is the hydrophobicity of the hydrophobic compound, and the amount of hydrophobic compound, that primarily contributes to the claimed floatability of the claimed particles.

In the Advisory Action, the examiner asserts that "the references applied disclose all that is contained in the instant claims as presently written". As fully discussed above, this assertion is incorrect.

X. CONCLUSION

In view of the foregoing remarks, appellants respectfully request that the Board reverse the final rejection of claims 1, 2, 15, 21, 24, and 26-30, and that all pending claims should be allowed.

Dated: April 13, 2011

Respectfully submitted,

By: _____

James J. Napoli
Registration No.: 32,361
MARSHALL, GERSTEIN & BORUN LLP
233 S. Wacker Drive
6300 Willis Tower
Chicago, Illinois 60606-6357
(312) 474-6300
Attorney for Applicant

CLAIMS APPENDIX

Claims Involved in the Appeal of Application Serial No. 10/576,049

1. (Presently presented) A hydrogel having a floatability and having a thickening capability wherein the hydrogel thickens from 40% to 90% of an aqueous solution or suspension starting from the surface of the solution or suspension and the hydrogel thickens the rest of the solution or suspension starting from the bottom of a container for the solution or suspension, said hydrogel comprising superabsorbent polymer particles coated with 0.05% to 1%, by weight, of a hydrophobic compound, wherein the hydrophobic compound is a hydrophobicized silica or a hydrophobicized mixture of silicas and aluminas, and 0.05% to 4%, by weight, of a multivalent cation.

2. (Previously presented) The hydrogel of claim 1 having a solidification time of less than 120 seconds upon contact with the solution or suspension and/or having a blood absorbance of at least 10 g/g.

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Previously presented) A hygiene article comprising a hydrogel of claim 1, said hygiene article selected from the group consisting of an incontinence article, a napkin, a tampon, and a liner.

16. (Cancelled)

17. (Withdrawn) A method of absorbing blood, body fluids, or both comprising contacting the blood, body fluid, or both with a hydrogel of claim 1.

18. (Withdrawn) The method of claim 17 wherein the hydrogel is present in a hygiene article.

19. (Withdrawn) A method of thickening an aqueous solution or suspension comprising contacting the solution or suspension with a hydrogel of claim 1.

20. (Withdrawn) A method of thickening medical wastes comprising contacting the medical waste with a hydrogel of claim 1.

21. (Previously presented) A composition comprising a hydrogel of claim 1 and one or more of a biocidal material, an antimicrobial material, an antibacterial material, a perfume or scent material, a stabilizer, a dye, and a pH indicator.

22. (Cancelled)

23. (Cancelled)

24. (Presently presented) The hydrogel of claim 1 wherein the hydrophobic compound is particles having an average diameter from 0.001 to 10 μm.

25. (Cancelled)

26. (Presently presented) The hydrogel of claim 30 wherein the hydrophilic compound is a silica or a mixture of silicas and aluminas.

27. (Previously presented) The hydrogel of claim 1 wherein the hydrogel further comprises a surfactant.

28. (Previously presented) The hydrogel of claim 1 wherein the multivalent cation is an aluminum ion.

29. (Previously presented) The hydrogel of claim 27 wherein the surfactant is a sorbitan ester.

30. (Previously presented) The hydrogel of claim 1 further comprising a hydrophilic compound.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.